Corps Navigation Mission

Provide safe, reliable, efficient, effective and environmentally sustainable waterborne transportation systems for movement of commerce, national security needs, and re

Lock and Dam 3

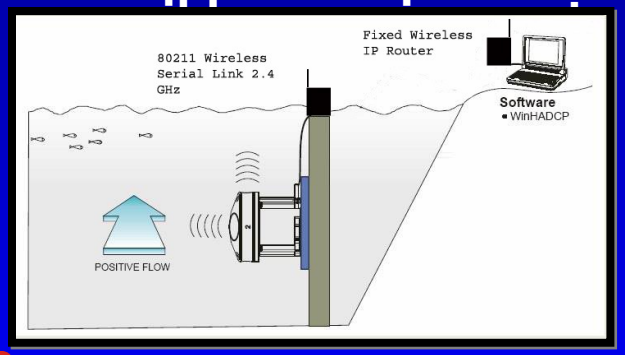
- Barge sunk in dam gates August 1,1993
  - Only four roller gates
- Eleven-dam accidents since 1968

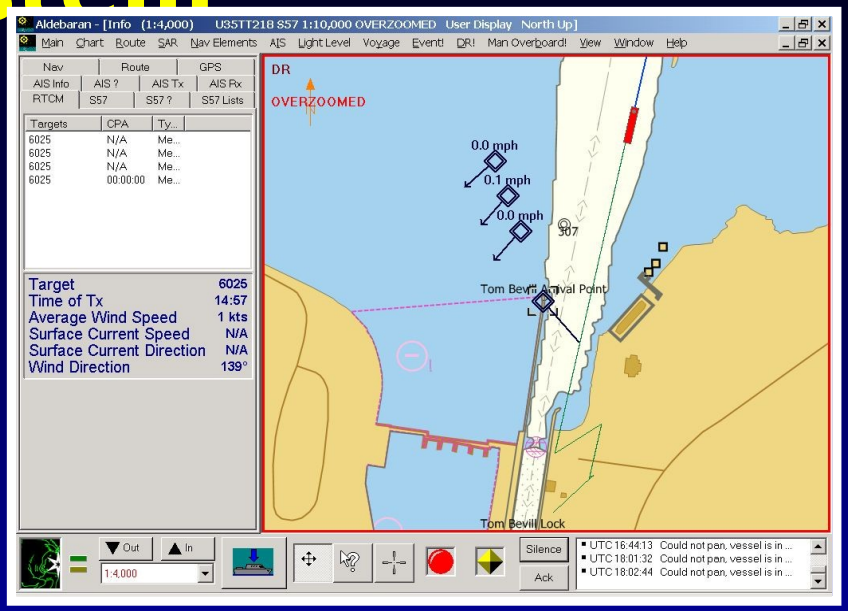
RTCV Partners

- Corps
  - HQ
  - ERDC (CHL)
  - Mobile District
  - Pittsburg District
- Towing Industry
  - Ingram Towing
- USGS
- USCG
- Equipment Suppliers
  - ADCP (CC Lynch & RD Instruments)
  - AIS Software (ICAN Marine)
- Contractors
  - Maxscient

Real Time Current Velocity System

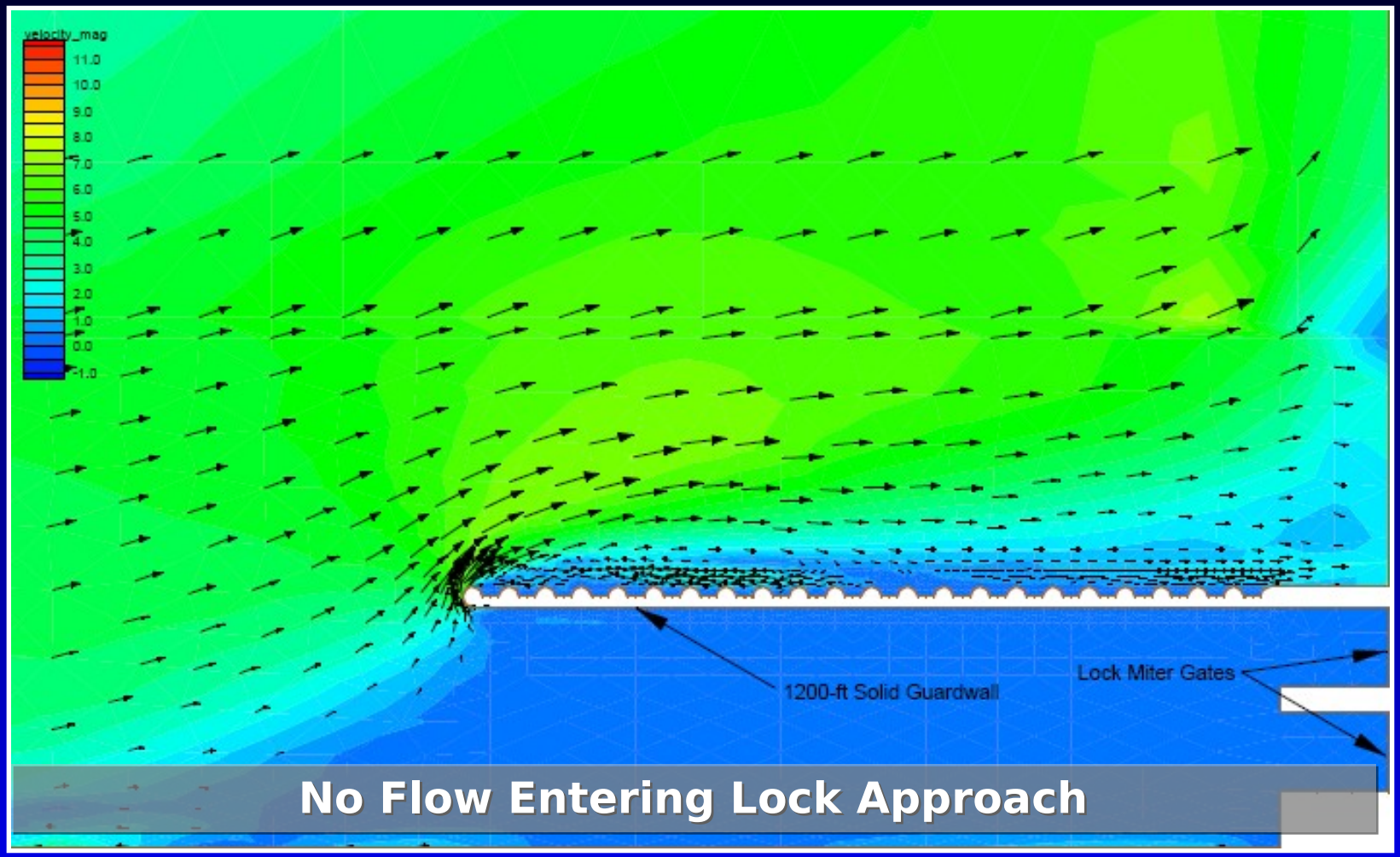
- **Capability Being Developed**
  - **Real Time Outdraft Measurement that is transmitted to Tows approaching a Corps Lock and Dam**
- **Status**
  - **PDT being Developed**
  - **Process of identifying Structures with known Outdraft problems**
  - **Investigating other**



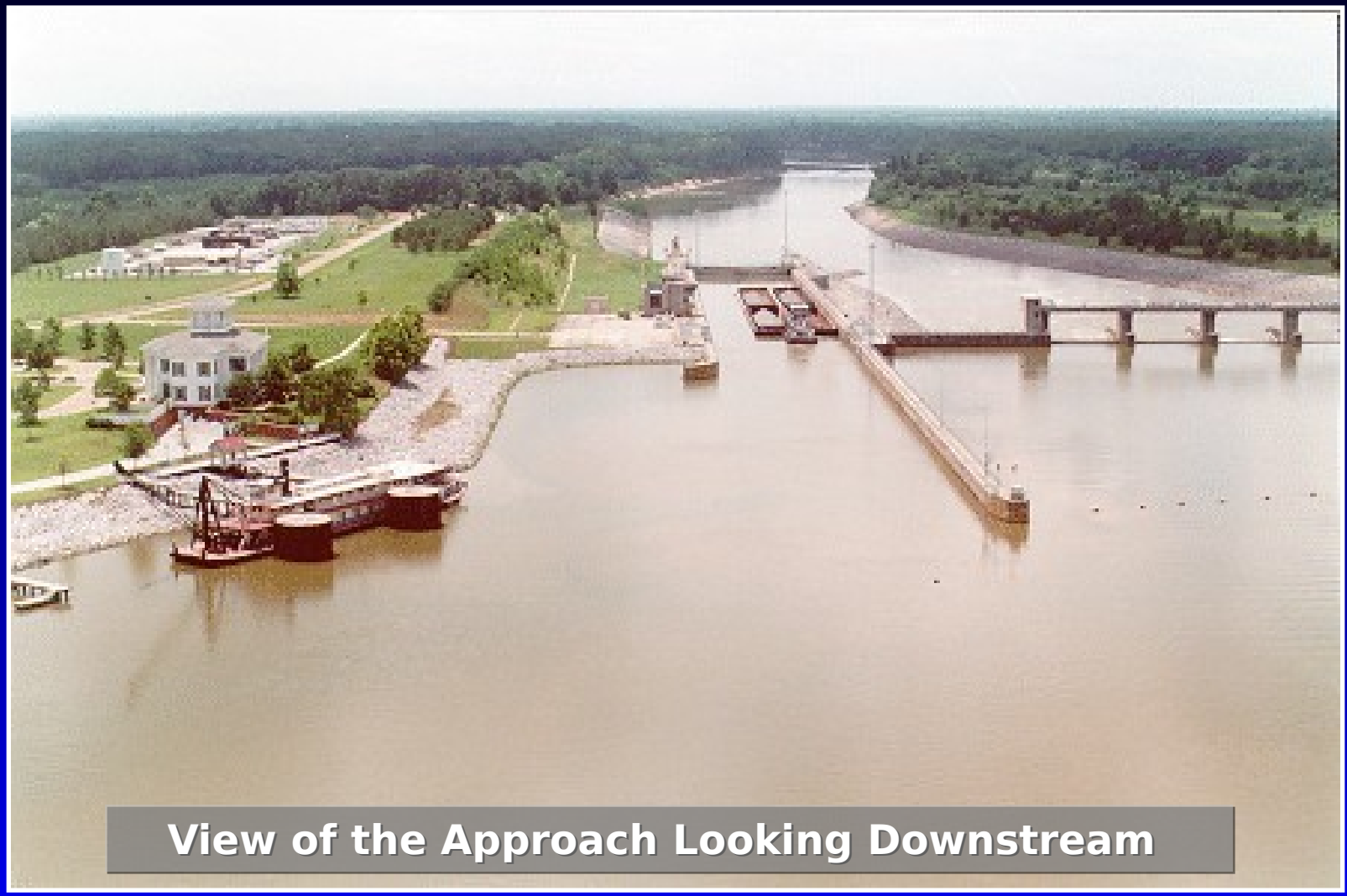

Aldebaran - [Info (1:4,000) U35TT21B S57 1:10,000 OVERZOOMED User Display North Up]
Main Chart Route SAR Nav Elements AIS Light Level Voyage Event! DR! Man Overboard! View Window Help
Nav Route GPS
AIS Info AIS ? AIS Tx AIS Rx
RTCM S57 S57 ? S57 Lists
Targets CPA Ty...
6025 N/A Me...
6025 N/A Me...
6025 N/A Me...
6025 00:00:00 Me...
Target 6025
Time of Tx 14:57
Average Wind Speed 1 kts
Surface Current Speed N/A
Surface Current Direction N/A
Wind Direction 139°
DR
OVERZOOMED
0.0 mph
0.1 mph
0.0 mph
307
Tom Bevill Arrival Point
Tom Bevill Lock
Out In
1:4,000
Silence
Ack
UTC 16:44:13 Could not pan, vessel is in ...
UTC 18:01:32 Could not pan, vessel is in ...
UTC 18:02:44 Could not pan, vessel is in ...

- **Benefits: Improved Safety on Inland Waterways**
  - **Real Time Data provided for the Mariner to make better decisions**
  - **Utilizing AIS Network to send and receive standard messages**
  - **Ability to Direct Marine Traffic and Transmit Lock Schedules to a Que**
  - **Providing Real Time Commence Data**

Outdraft


velocity_mag
11.0
10.0
9.0
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
-1.0
1200-ft Solid Guardwall
Lock Miter Gates
No Flow Entering Lock Approach

Tom Bevill Lock and Dam



View of the Approach Looking Downstream

Tom Bevill – Confetti Picture

Upstream View of the Model

Tom Bevill Outdraft

Time Lapse Video at Tom Bevill

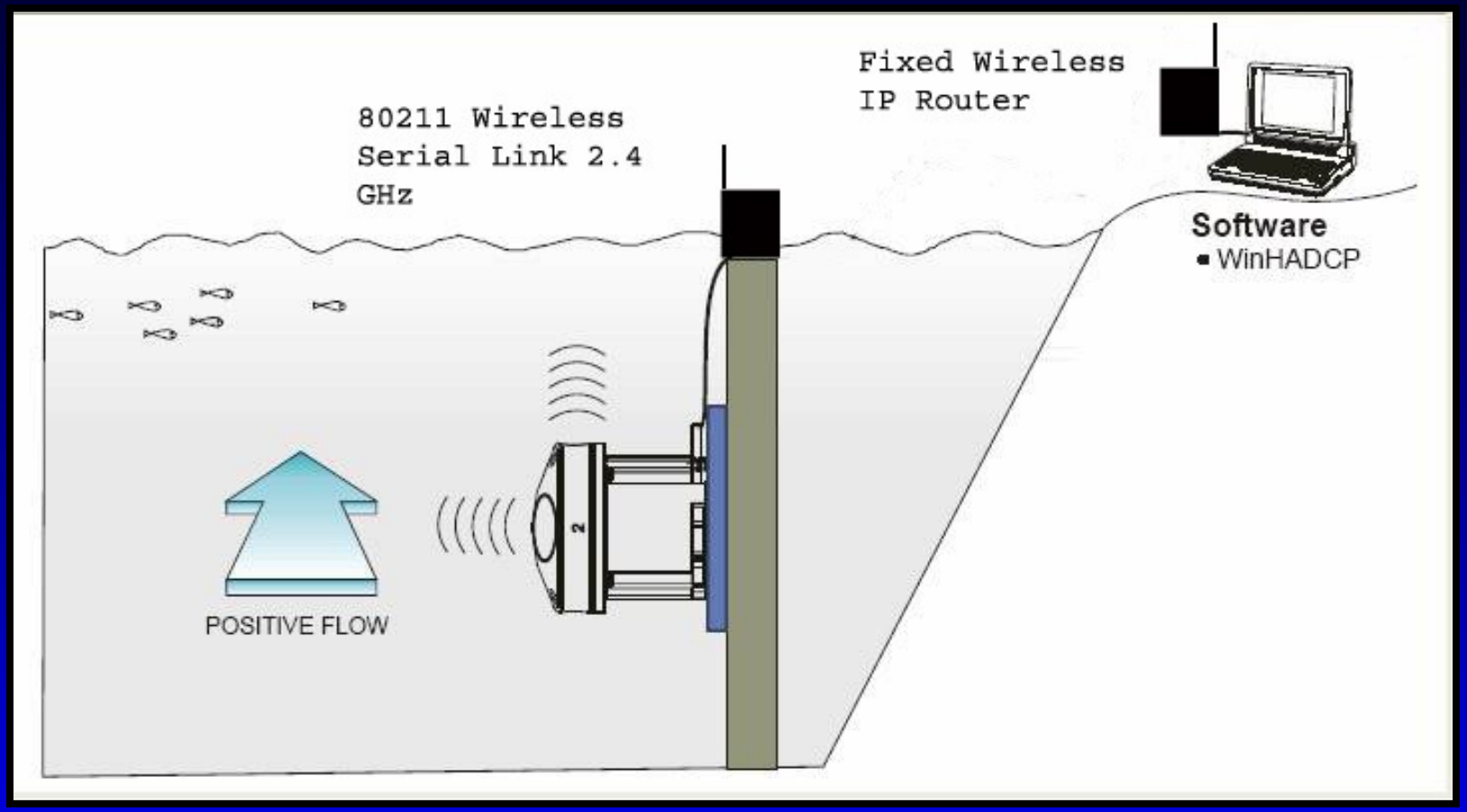
Bull Nose Guard Wall

H-ADCP Doppler Unit

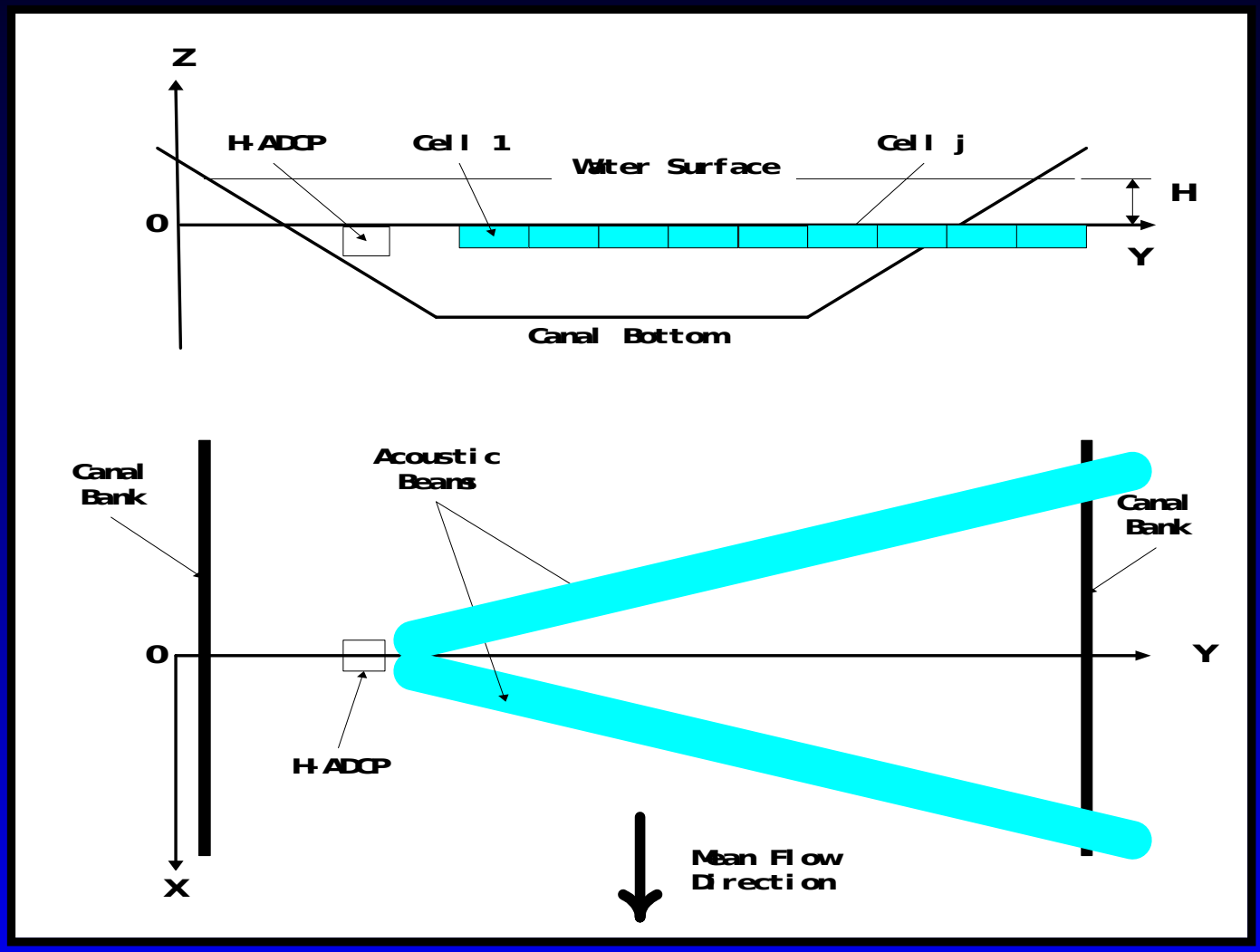
H-ADCP Mount

H-ADCP Mounted

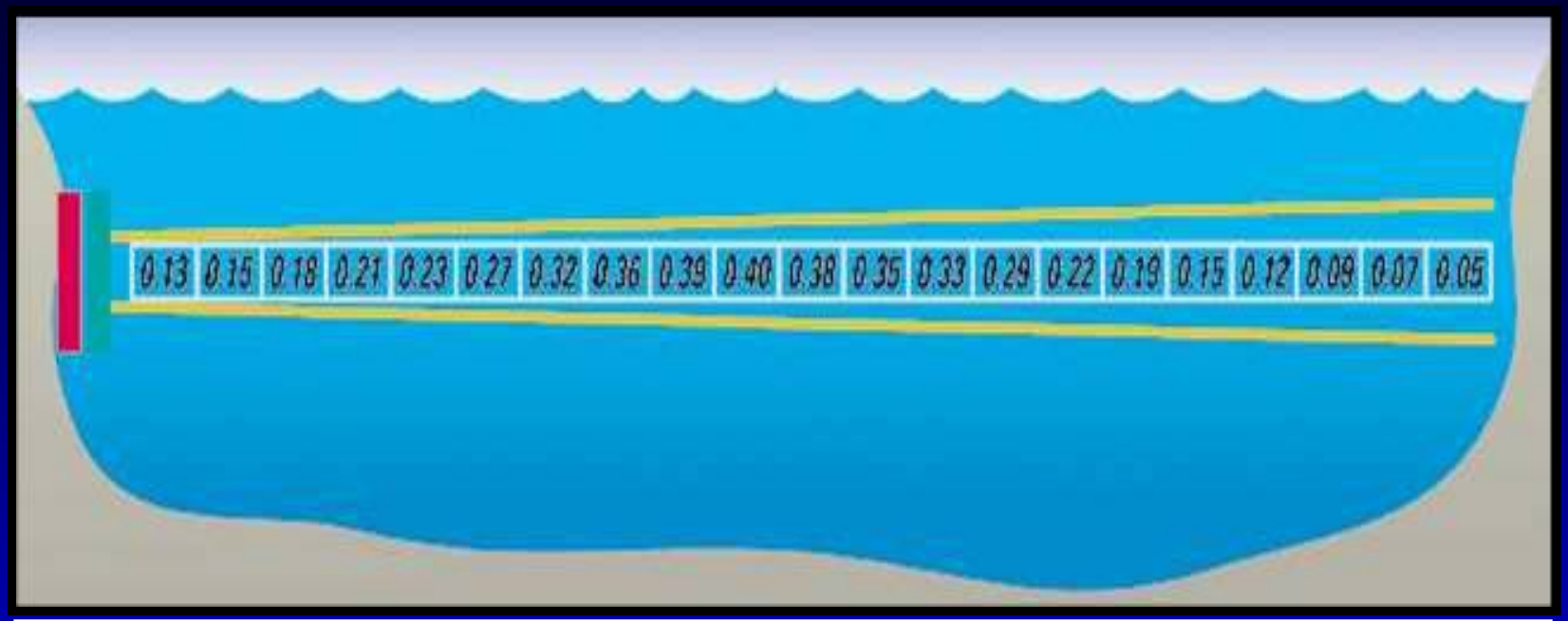
Horizontal ADCP



H-ADCP Operation



ADCP Measurements



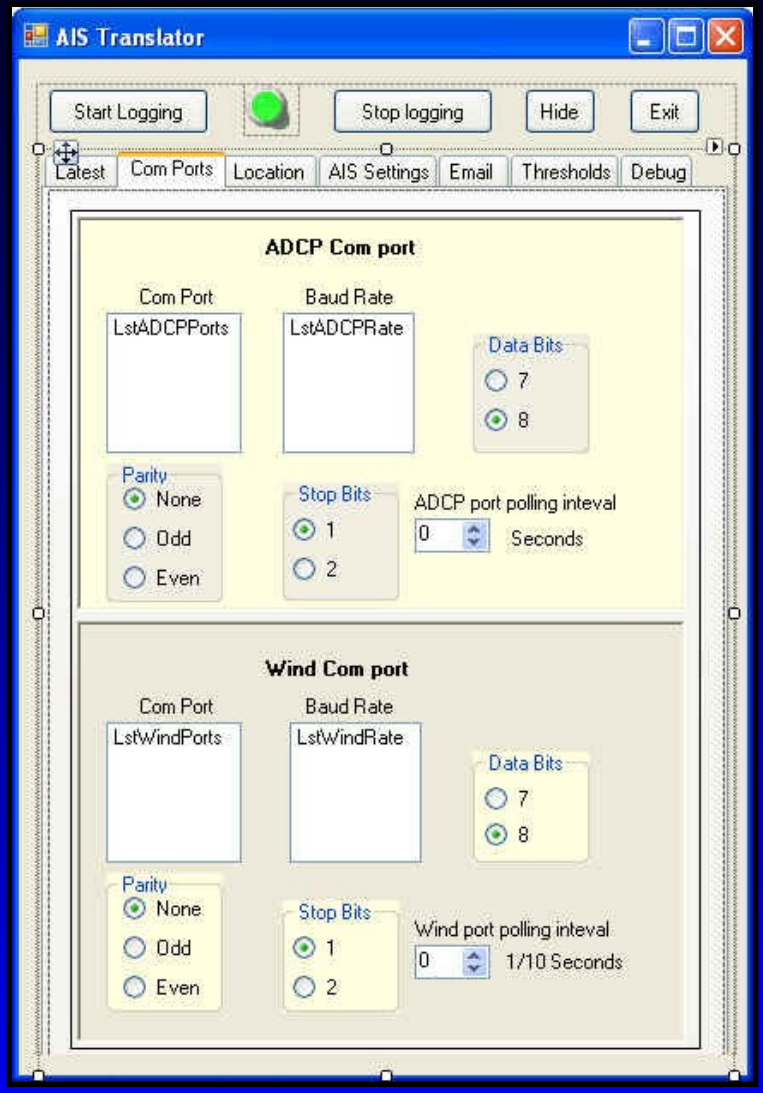
Separate Velocity Measurements - BINS

Wind Meter

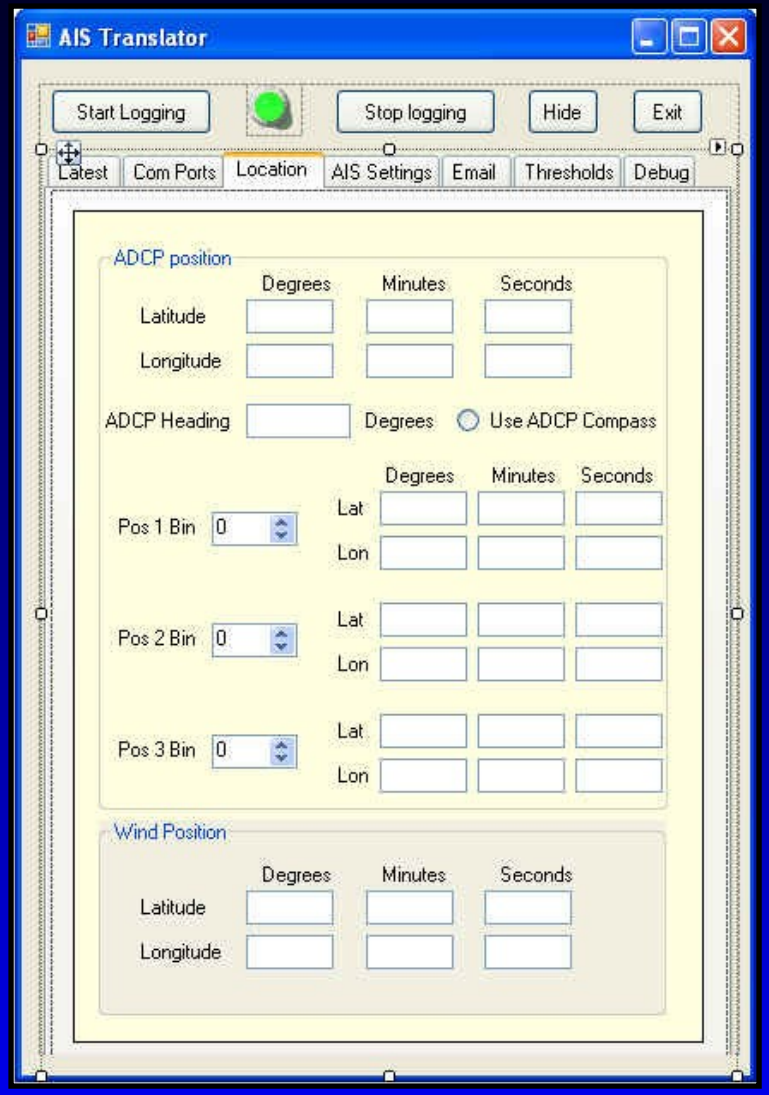
ADCP/Wind Control Station

RTCV Workstation

AIS Translator Program



AIS Translator Program



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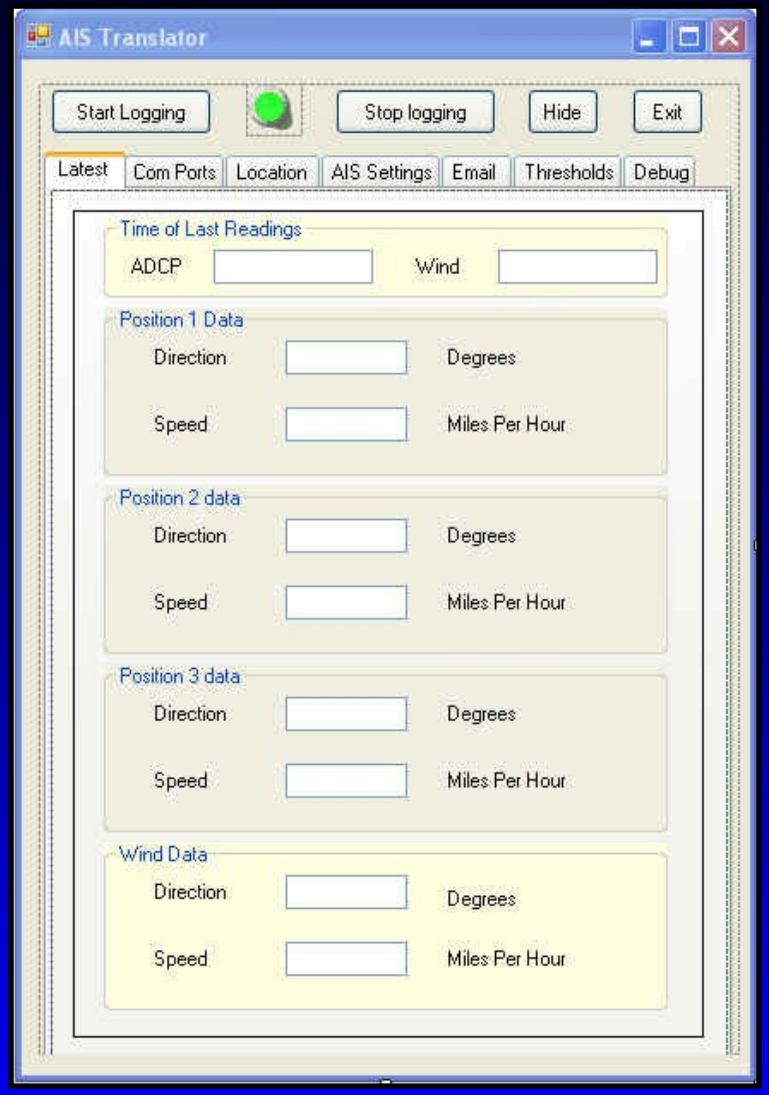

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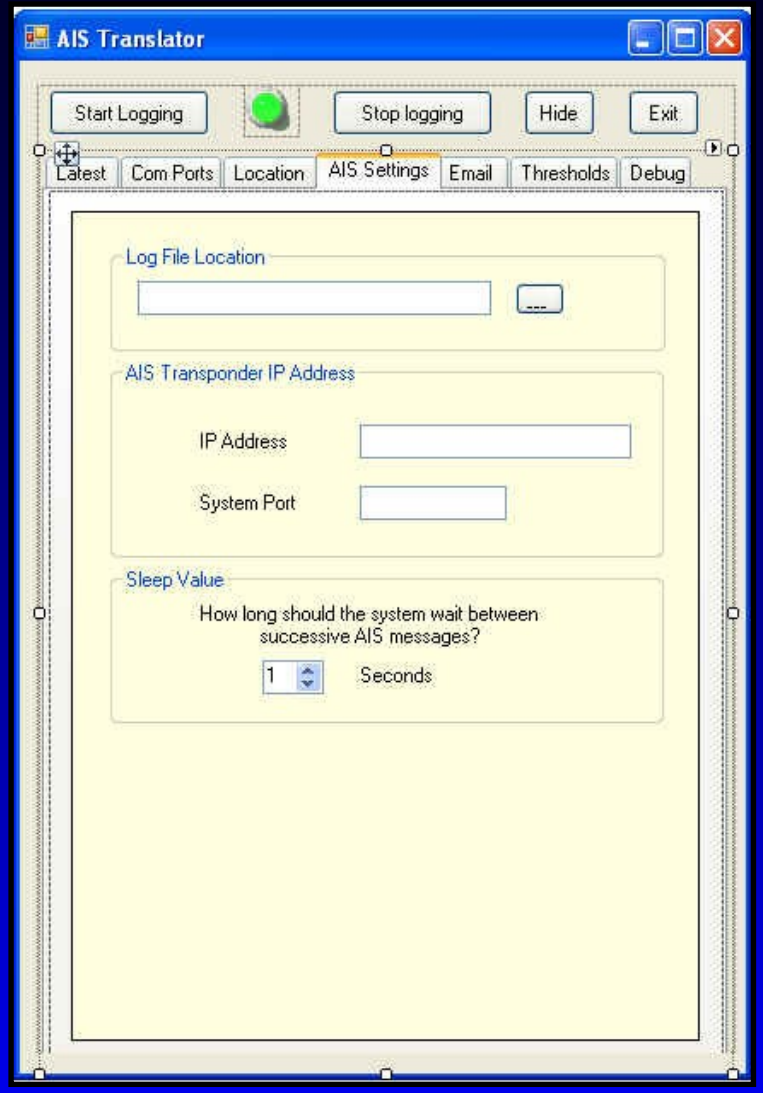
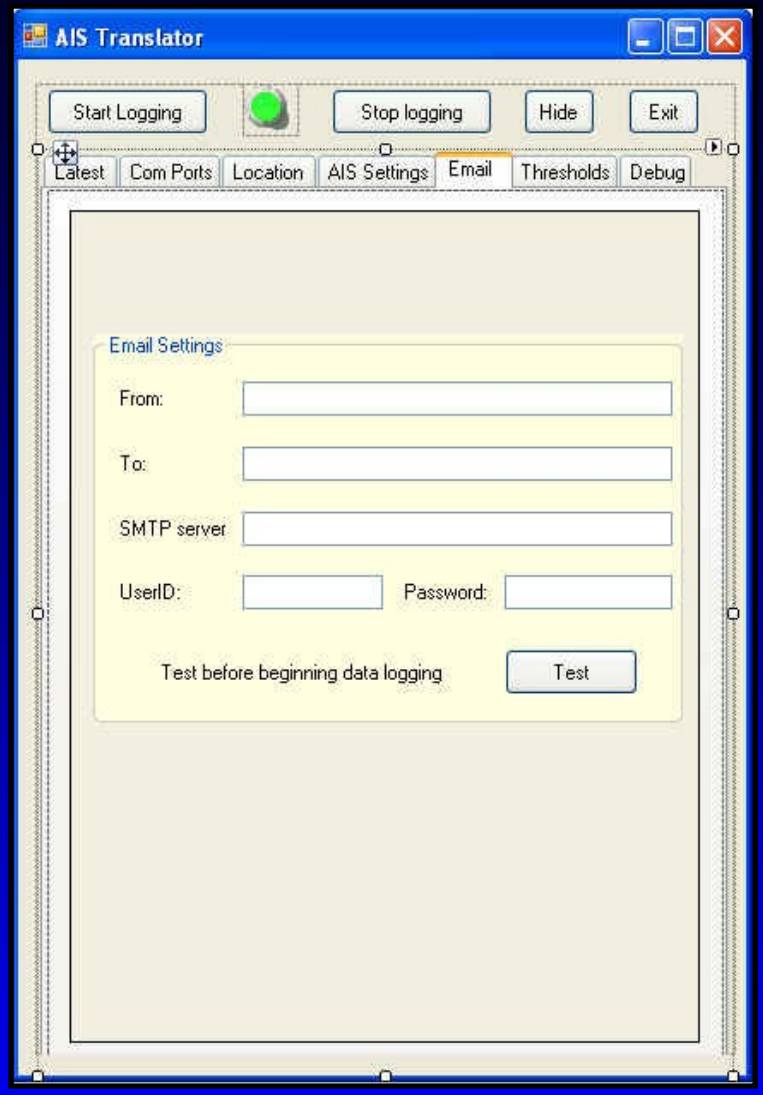


AIS Translator Program



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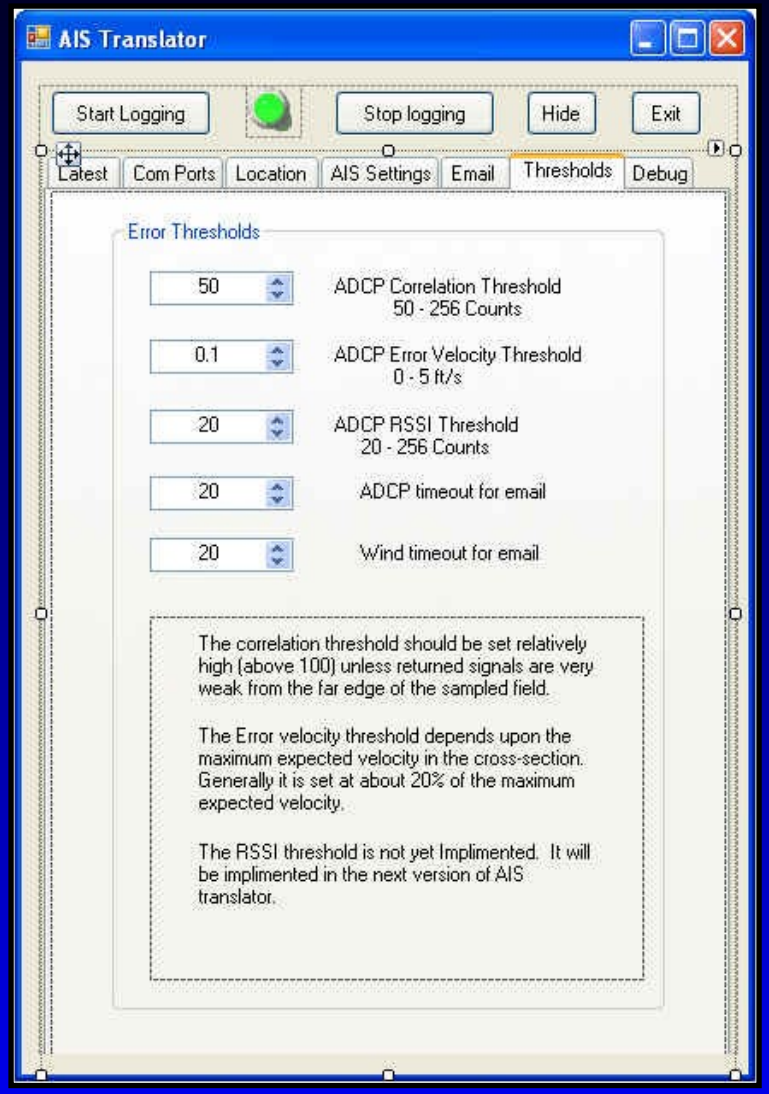
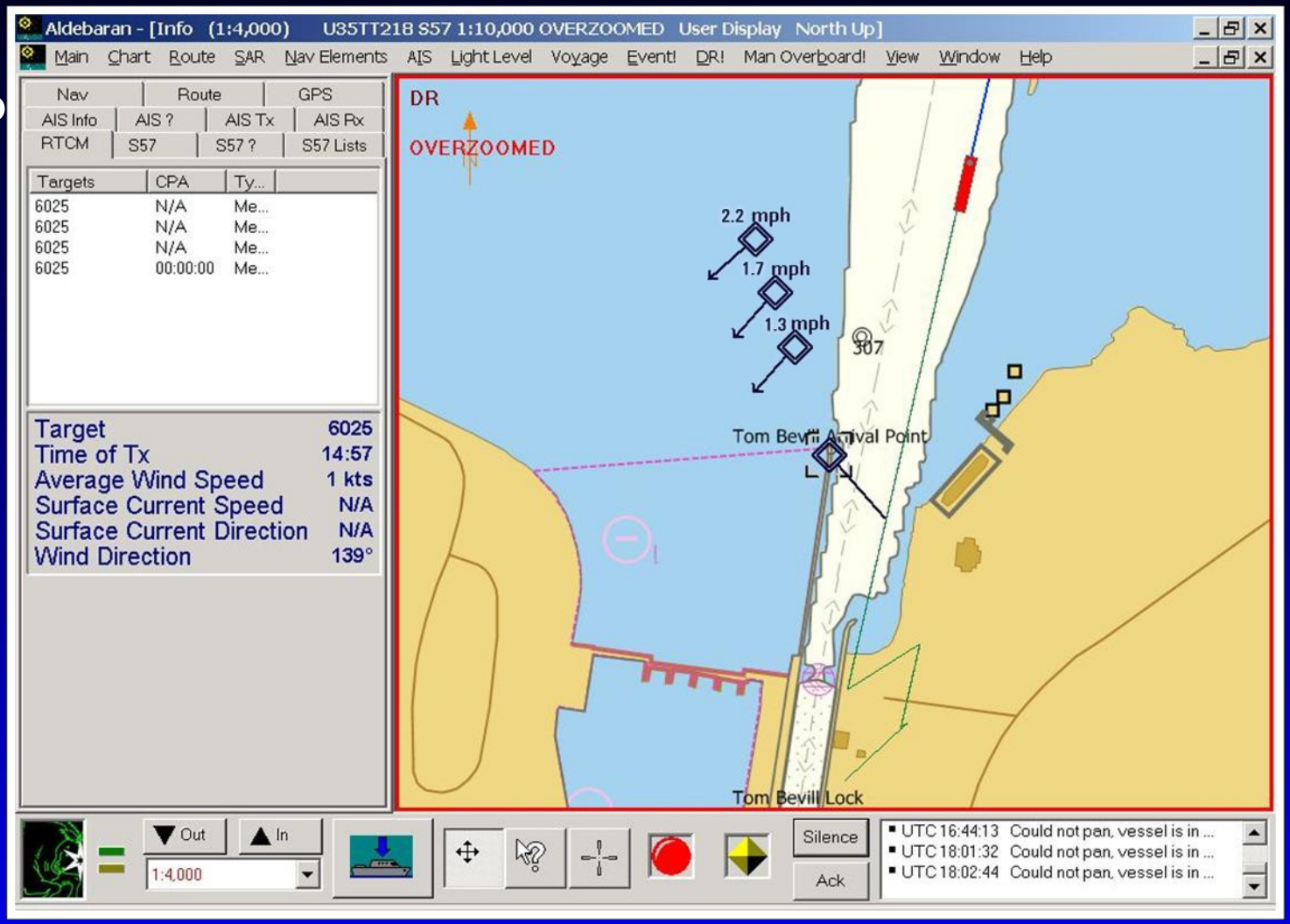

AIS Translator
Start Logging
Stop logging
Hide
Exit
Latest
Com Ports
Location
AIS Settings
Email
Thresholds
Debug
Error Thresholds
50
ADCP Correlation Threshold
50 - 256 Counts
0.1
ADCP Error Velocity Threshold
0 - 5 ft/s
20
ADCP RSSI Threshold
20 - 256 Counts
20
ADCP timeout for email
20
Wind timeout for email
The correlation threshold should be set relatively high (above 100) unless returned signals are very weak from the far edge of the sampled field.
The Error velocity threshold depends upon the maximum expected velocity in the cross-section. Generally it is set at about 20% of the maximum expected velocity.
The RSSI threshold is not yet Implimented. It will be implimented in the next version of AIS translator.

Current Vectors on IENC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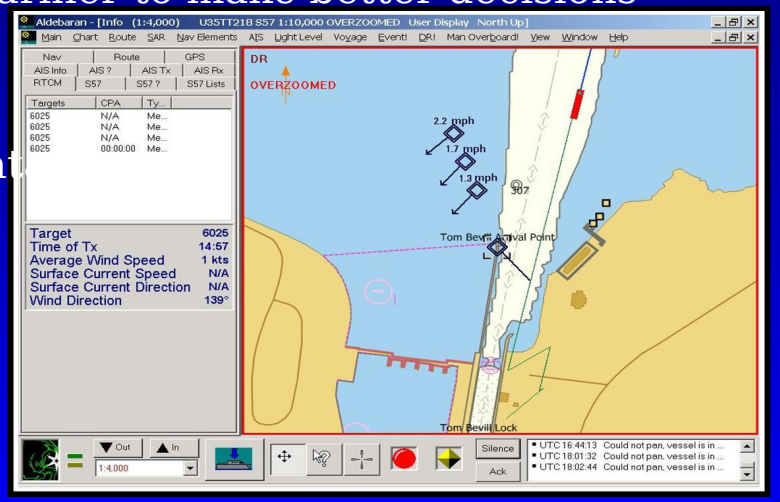
Real Time Current Velocity System

- Status
  - PDT being Developed
  - Process of coordinating with Industry to identifying Structures with known Outdraft problems and prioritize them
  - Investigating Application to other locations, i.e. ports and bridges
  - This is just one piece of a River Information System (RIS)
    - Real Time Data provided for the Mariner to make better decisions
    - Utilizing AIS Network
    - Ability to Direct Traffic
    - Providing Real Time Commence Dat
- Contact
  - Michael Winkler, 601-634-2652

    Michael.f.winkler@usace.army.mil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